

DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY		
Wisconsin Model Academic Standards for Science – Grade 8		
Lesson	Standard	Description
All lessons	A.8.1	Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems.
1	A.8.3	Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them.
1	A.8.6	Use models and explanations to predict actions and events in the natural world.
1, 2	A.8.7	Design real or thought investigations to test the usefulness and limitations of a model.
1, 3	B.8.3	Explain how the general rules of science apply to the development and use of evidence in science investigations, model making, and applications.
1	B.8.5	Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time.
All lessons	C.8.1	Identify questions they can investigate using resources and equipment they have available.
1, 3, 4	C.8.2	Identify data and locate sources of information including their own records to answer the questions being investigated.
1, 3, 4	C.8.3	Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions.
1, 3, 4	C.8.4	Use inferences to help decide possible results of their investigations, use observations to check their inferences.
1, 3, 4	C.8.5	Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations.
1, 3, 4	C.8.6	State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected.
1, 3, 4	C.8.7	Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed.
3, 4	C.8.8	Use computer software and other technologies to organize, process, and present their data.
1, 3, 4	C.8.9	Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations.
1, 3, 4	C.8.10	Discuss the importance of their results and implications of their work with peers, teachers, and other adults.

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All lessons	C.8.11	Raise further questions which still need to be answered.
1	G.8.1	Identify and investigate the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need.
3	G.8.7	Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations.
3, 4	H.8.3	Understand the consequences of decisions affecting personal health and safety.
Wisconsin Model Academic Standards for Mathematics – Grade 8		
Lesson	Standard	Description
2, 3, 4	A.8.1	Use reasoning abilities to: evaluate information, perceive patterns, identify relationships, formulate questions for further exploration, evaluate strategies, justify statements, test reasonableness of results, and defend work.
3, 4	A.8.3	Analyze non-routine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.
3, 4	A.8.4	Develop effective oral and written presentations that include appropriate use of technology, the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings), mathematical language, clear organization of ideas and procedures, and understanding of purpose and audience.
3, 4	B.8.1	Read, represent, and interpret various rational numbers (whole numbers, integers, decimals, fractions, and percents) with verbal descriptions, geometric models, and mathematical notation (e.g., expanded, scientific, exponential).
3, 4	B.8.2	Perform and explain operations on rational numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value).
4	B.8.3	Generate and explain equivalencies among fractions, decimals, and percents.
3, 4	E.8.1	Work with data in the context of real-world situations by: formulating questions that lead to data collection and analysis, designing and conducting a statistical investigation, and using technology to generate displays, summary statistics, and presentations.
3, 4	E.8.2	Organize and display data from statistical investigations using: appropriate tables, graphs, and/or charts (e.g., circle, bar or line for multiple sets of data), or appropriate plots (e.g., line, stem-and-leaf, box, scatter).
3, 4	E.8.4	Use the results of data analysis to: make predictions, develop convincing arguments, and draw conclusions.
3, 4	E.8.5	Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses.
3	E.8.6	Evaluate presentations and statistical analyses from a variety of sources for: credibility of the source, techniques of collection, organization, and presentation of data, missing or incorrect data, inferences, and possible sources of bias.

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3	F.8.2	Work with linear and nonlinear patterns and relationships in a variety of ways, including representing them with tables, with graphs, and with algebraic expressions, equations, and inequalities, describing and interpreting their graphical representations (e.g., slope, rate of change, intercepts), using them as models of real-world phenomena, and describing a real-world phenomenon that a given graph might represent.
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Wisconsin Model Academic Standards for English Language Arts – Grade 8

Lesson	Standard	Description
2, 3, 4	A.8.1	Use effective reading strategies to achieve their purposes in reading.
2, 3, 4	A.8.4	Read to acquire information.
All lessons	B.8.1	Create or produce writing to communicate with different audiences for a variety of purposes.
All lessons	B.8.3	Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in communications.
All lessons	C.8.1	Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.
All lessons	C.8.2	Listen to and comprehend oral communications.
All lessons	C.8.3	Participate effectively in discussion.
All lessons	D.8.1	Develop their vocabulary and ability to use words, phrases, idioms, and various grammatical structures as a means of improving communication.
3	E.8.1	Use computers to acquire, organize, analyze, and communicate information.
All lessons	F.8.1	Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.

Wisconsin Model Academic Standards for Health Education – Grade 8

Lesson	Standard	Description
3	A.8.2	Analyze how environments and personal health are interrelated.
4	A.8.4	Describe how lifestyle, family history, and other risk factors are related to the cause or prevention of disease and other health problems.
3	A.8.5	Explain how health is influenced by the interaction of body systems.
3, 4	C.8.3	Analyze how decisions regarding health behaviors have consequences for themselves and others.
3, 4	G.8.2	Convey valid information and express opinions about health issues.